

Message Text

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SUBJECT: SOVIET SCIENTIST ARGUES FOR AUTOMATED SYSTEMS APPROACH
TO DECISION-MAKING FOR LARGE ECONOMIC PROJECTS

REF: MOSCOW A-86, 75 MOSCOW A-412

1. SUMMARY. PRAVDA HAS PUBLISHED A LONG ARTICLE BY A CORRESPONDING MEMBER OF THE USSR ACADEMY OF SCIENCES IN WHICH HE ARGUES THE PRESSING NEED FOR A COMPUTER-AIDED DESIGN APPROACH TO PLANNING LARGE ECONOMIC PROJECTS. ACCORDING TO THE ARTICLE, TWO MAIN OBSTACLES NOW PREVENT WIDE-SPREAD APPLICATION OF THIS METHOD. FIRST IS A "PSYCHOLOGICAL" FACTOR, NAMELY THAT MANY UNITS SIMPLY UNDERESTIMATE THE DIFFICULTIES OF USING THE SYSTEMS APPROACH BASED ON THIRD-GENERATION COMPUTERS. SECOND IS THE UNWARRANTED BELIEF THAT PRESENT SOVIET COMPUTER TECHNOLOGY IS INADEQUATE FOR SUCH UNDERTAKINGS. "TACTICAL" ERRORS SUCH AS INADEQUATE TRAINING AND SELECTION OF SPECIALISTS ARE ALSO CRITICISED. A KEY THEME IN THE ARTICLE IS THAT THE ACADEMY IS PREPARED TO TAKE A BROADER INVOLVEMENT IN LONG-TERM ECONOMIC DECISION-MAKING AND THAT PRESENT BARRIERS BETWEEN SCIENTISTS AND "IMPLEMENTERS" MUST BE ELIMINATED.

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END SUMMARY.

2. N. MOISEYEV, A CORRESPONDING MEMBER OF THE USSR ACADEMY OF SCIENCES, HAS WRITTEN A LONG ARTICLE IN PRAVDA ON JULY 21 STRONGLY ARGUING THE CASE FOR AN AUTOMATED SYSTEMS APPROACH, "AVTOMATIZATSIYA PROEKTIROVANIYA," FOR LARGE ECONOMIC PROJECTS BASED ON USE OF THIRD-GENERATION COMPUTERS. POINTING OUT THAT SUCH TECHNOLOGY COULD "REVOLUTIONIZE" ECONOMIC PLANNING, HE OBSERVES, HOWEVER, THAT THE APPLICATION IS "FAR FROM EASY". PRESENTLY, COMPUTERS ARE USED FOR SOME ASPECTS OF PLANNING LARGE PROJECTS, BUT THESE UNDERTAKINGS ARE NOW SO COMPLEX THAT ALL THE OPTIONS MUST BE STUDIED SIMULTANEOUSLY FROM ALL PERSPECTIVES IN ORDER TO PRODUCE THE BEST VARIANT.

3. MOISEYEV ASSERTS THAT THE AUTOMATED SYSTEMS APPROACH IS PARTICULARLY APPLICABLE TO LARGE PROJECTS DISCUSSED AT THE MARCH PARTY CONGRESS, SUCH AS THE DIVERSION OF SOME OF THE WATERS OF NORTHERN AND SIBERIAN RIVERS TO THE EUROPEAN AND CENTRAL ASIAN PARTS OF THE USSR. ONLY THIS METHOD COULD HANDLE THE ENORMOUS ENGINEERING AND ECONOMIC CALCULATIONS NEEDED TO PRODUCE THE BEST PROJECT PLAN. SCIENCE HAS ALREADY LAID THE CONCEPTUAL BASIS FOR THIS APPROACH, THE SO-CALLED "SIMULATION SYSTEMS," AND, HE ADDS, CERTAIN ORGANIZATIONAL MEASURES ALREADY TAKEN WILL FURTHER THE DEVELOPMENT OF THE METHOD. NONETHELESS, THE SUCCESSES TO DATE IN USING THE SYSTEMS APPROACH HAVE BEEN "RATHER MODEST."

4. THE MAIN OBSTACLE, THE AUTHOR WRITES, IS OF A "PSYCHOLOGICAL" NATURE. MANY PEOPLE CAN NOW OPERATE A COMPUTER BUT FEW COLLECTIVES HAVE COME TO GRIPS WITH ALL THE DIFFICULTIES WHICH MUST BE OVERCOME TO MAKE THE SYSTEMS APPROACH WORK EFFECTIVELY. THIS RESULTED IN THE "UNJUSTIFIED" OPTIMISM WHICH "IN NO SMALL WAY" CAUSED MANY PROBLEMS AT THE OUTSET OF WORK ON THE AUTOMATED SYSTEM OF MANAGEMENT (SEE REFAIR B).

5. THE OTHER PROBLEM IS THAT "NOT INFREQUENTLY" REFERENCES ARE STILL MADE TO THE "IMPERFECTION" OF PRESENT COMPUTER TECHNOLOGY. OF COURSE, MOISEYEV SAYS, WE ARE WAITING "IMPATIENTLY" FOR MUCH MORE POWERFUL SYSTEMS POSSESSING DEVELOPED PERIPHERY AND ORIENTED FOR SCIENTIFIC RESEARCH. BUT, WITH "FULL RESPONSIBILITY," HE ASSERTS THAT PRESENT EQUIPMENT WILL PERMIT "SURPRISINGLY" MUCH TO BE DONE. PAST EXPERIENCE IN WEST SIBERIAN FUEL DEVELOPMENT LIMITED OFFICIAL USE

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SHOWS THAT THE LINKAGE OF THE "BESM-6" WITH STANDARD PERIPHERY PROVIDES THE BASE FOR CREATING A COMPLEX SYSTEM OF AUTOMATED PLANNING.

6. VARIOUS "TACTICAL" PROBLEMS ALSO EXIST. ATTEMPTS ARE BEING MADE, HE OBSERVES, TO CREATE "UNIVERSAL" SYSTEMS WHEN AT FIRST A WHOLE SERIES OF SYSTEMS SHOULD BE DEVELOPED AND ONLY LATER STANDARIZED. THE "WALLS" BETWEEN PURCHASER AND IMPLEMENTER AND

CONSTRUCTOR AND MATHEMATICIAN SHOULD BE REMOVED. COMPUTER SPECIALIST TRAINING MUST BE IMPROVED. MORE SYSTEMS PROGRAMMERS MUST BE PLACED IN HIGHER-LEVEL SCHOOLS TO TEACH RATHER THAN LEAVING THEM IN PLANNING INSTITUTES. AND A SELECT GROUP OF "NEW-TYPE" SYSTEMS ANALYSTS MUST BE TRAINED, WHO WILL BE MULTIDISCIPLINARY AND UNDERSTAND THE LANGUAGES OF DESIGN AND MATH. UNFORTUNATELY, HE STATES, THEY ARE NOT NOW BEING TRAINED IN ANY INSTITUTE.

7. THE AUTHOR ENDS BY SAYING THAT USE OF COMPUTERS FOR PLANNING LARGE PROJECTS AND FOR INTERDISCIPLINARY RESEARCH IS GRADUALLY ACQUIRING A "FUNDAMENTAL CHARACTER," BUT THAT FURTHER DEVELOPMENT IS "IMPOSSIBLE" WITHOUT THE ACTIVE PARTICIPATION OF THE ACADEMY. HE LAUDS THE CURRENT RESEARCH BEING CONDUCTED BY THE ACADEMY AND ITS AFFILIATES, BUT ADDS THAT THESE CENTERS MUST BE STRENGTHENED "MATERIALLY AND ORGANIZATIONALLY" AND NEW AFFILIATES CREATED OR OPENED IN CERTAIN UNIVERSITY CENTERS.

8. COMMENT. ON ONE LEVEL, THIS ARTICLE IS CLEARLY A CALL FOR MORE INVOLVEMENT OF THE ACADEMY IN LONG-TERM ECONOMIC DECISION-MAKING. THIS POSITION WAS SIGNALLED AT THE MARCH PARTY CONGRESS IN ACADEMY PRESIDENT ALEXANDROV'S DEMANDS THAT THE ACADEMY TAKE THE LEAD IN DEVELOPING A COMPREHENSIVE ENERGY PROGRAM FOR THE USSR (REFAIR A). MOISEYEV IS ALSO MAKING A STRONG PLEA FOR A BREAKDOWN OF EXISTING BARRIERS BETWEEN RESEARCH INSTITUTES AND ECONOMIC MINISTRIES.

9. HIS ALLUSION TO "PSYCHOLOGICAL" FACTORS NOW INHIBITING WIDESPREAD USE OF AUTOMATED DESIGN IS ESPECIALLY NOTEWORTHY AND COULD INDICATE THAT CONCERN ABOUT JOB DISPLACEMENT MAY LIE BEHIND THE RELUCTANCE OF SOME ORGANIZATIONS TO USE THIS APPROACH. FOR MOISEYEV THIS WOULD BE ESPECIALLY NETTLESOME SINCE HE OBVIOUSLY BELIEVES AUTOMATED DESIGN AND A SYSTEMS APPROACH CAN BE OF PARTICULAR USE IN A PLANNED ECONOMY.

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